

70 AD A O 4754 CCUPATIONAL SURVEY REPORT ELECTRONIC PRINCIPLES



DIGITAL NAVIGATION/TACTICS TRAINING
DEVICES SPECIALIST
AFSC 34156

AFPT-90-341-222 25 AUGUST 1977

OCCUPATIONAL SURVEY BRANCH USAF OCCUPATIONAL MEASUREMENT CENTER LACKLAND AFB TEXAS 73236

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Digital Navigation/Tactics Training Devices Specialist, AFSC 34156.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Captain Frederick B. Bower, Jr. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF Commander USAF Occupational Measurement Center WALTER E. DRISKILL, Ph.D. Chief, Occupational Survey Branch USAF Occupational Measurement Center



ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT DIGITAL NAVIGATION/TACTICS TRAINING DEVICES SPECIALIST AFSC 34156

INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Digital Navigation/ Tactics Training Devices Specialists (AFSC 34156). The data for this report were collected during the period April through June 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands.

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 34156 airmen worldwide. Responses from 105 individuals represented 74 percent of the total of all AFSC 34156 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
1	MATHEMATICS	A1	2
	DIRECT CURRENT AND VOLTAGE	A15	2
2 3	DECICTANCE	A24	2 2 2 3
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE	B67	
· ·	REACTANCE	507	4
7	CAPACITORS AND CAPACITIVE	C92	
	REACTANCE	0.92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE	D229	0
	(TIME CONSTANTS)	0229	. 10
12	FILTERS	D239	• 10 10
13	COUPLING	E261	11
14	SOLDERING	E273	11
15		E295	
16	RELAYS MICROPHONES		12
17	SPEAKERS	F314	12
18	OSCILLOSCOPES	F327	13
		F342	13
19 20	SEMICONDUCTOR DIODES	G354	13
21	TRANSISTORS	G404	15
22	TRANSISTOR AMPLIFIERS	G428	16
22	SOLID-STATE SPECIAL PURPOSE	11477	10
22	DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	19
25	MULTIVIBRATORS	1539	20
26	LIMITERS AND CLAMPERS	1555	21
27	ELECTRON TUBES	1565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	22
29	SPECIAL PURPOSE ELECTRON	J616	
	TUBES		23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	23
31	AM SYSTEMS	K638	23
32	FM SYSTEMS	K666	24
32	THI STOTEMS	KOOO	24

TABLE 1 (CONTINUED) EPI SUBJECT AREAS

SEQUENCE OF		BEGINNING ITEM	GPSUM
SUBJECT AREAS	SUBJECT AREA TITLE	NUMBER	PAGE NUMBER
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	25
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	27
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	28
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND	N818	
	MAGNETIC AMPLIFIERS		29
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	30
44	PULSE MODULATION SYSTEMS	0875	31
45	ANTENNAS	0914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY	P984	
	RESONATORS		35
48	MICROWAVE AMPLIFIERS AND	P1034	
	OSCILLATORS		37
49	REGISTERS	Q1110	39
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1 255	44

TABLE 2

COMMAND REPRESENTATION OF SURVEY SAMPLE

	34	156
COMMAND	PERCENT ASSIGNED	PERCENT OF SAMPLE
ATC	5	7
MAC	3	5
SAC	22	24
TAC	56	59
USAFE	12	2
PACAF	2	1
OTHER	<u> </u>	2
TOTAL	100	100

Total Assigned - 146 Total Sampled - 105 Percent Sampled - 74%

PRESENTATON OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the eight selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on pages 6-7 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Soldering (pp. 11-12) and Numbering Systems (p. 25) to low in areas such as Infrared and Lasers (pp. 41-43). Additional AFSC 34156 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTEL GROUPS IN THE 341X4 CAMEEN FIELD.

REPORTS ON THE FOLLOWING GROUPS WENE HERUESTED

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127	2	5.	24.52	23 24	0 3 7	22	2000	7 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	**************************************	
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01-T5K	A 1 41-01 IN YOUR PRESENT JOBS DO YOU USE INSTRUMENTS, SUCH AS METENS OR USCILLUSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.	A 2 A1-32 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL OFFERS OF MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MALITIPLY OR DIVIDE BY A POMER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY OF THE APPLY THE LOSE TO BE A POMER OF THE APPLY THE LOSE TO BE A PROPERTY THE LOSE TO BE A BREFUL WAY OF THE ADMINISTRATION FROM THE PUBLICATION IN A USEFUL WAY OF THE ADMINISTRATION FROM THE PUBLICATION IN A USEFUL WAY	DO YOU REARRANGE AND SOLVE FORMULAS OF E DO YOU CALCULATE THE SQUARE ROLT DE A BUD TOU SOLVE FOR UNKNOWN CURNITIES. DO YOU CONVENT NUMBERS TO LOGATINAS.	CALCULATIONS SAITURE DO TOU	A 9 41-09 DG YOU USE THE MATURAL SYSTEM OF LOGARITHMS. A 1D 31-10 DG YOU PERFORM CALCULATIONS ON MEGTOR GUARITITIES. A 11 41-11 DG YOU WORK WITH TRIGORDHETRIC FUNCTIONS SUCH AS	12 41-12 DO	15 42-01 00 700 USE THE TERM VIGE A2-02 00 700 USE THE TERM ELT A2-03 00 700 USE THE TERM OF	USE THE TERN 19N. USE THE TERN DYNE. USE THE TERN AMPERE. USE THE TERN REUTRON. USE THE TERN ROUTONE. USE THE TERN PROTON.	* 5 C K S C C C C C C C C C C C C C C C C C	VALUE OF RESISTANCE.

GPSUMB PAGE 3

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PCT MBRS NESPONDING TYES" BY SELECTED GRPS

CPSUM6 PAGE 4

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CAPACITORS AND CAPACITIVE REACTANCE

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PCT HBRS RESPONDING TEST BY SELECTED GRPS

SPSUMS PAGE

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DY-15K	C 152 C2-25 Do You REFER TO HULTIPLE SECONGANY-WINDINGS SCHEMATIC	TOU KEFEK	C 154 CA-27 CANBOLS FUR FEER TO CENTER TAP SCHEMATIC STRBOLS FUR TRANSFORMERS	C 155 C2-28 DU YOU REFER TO AIR COME SCHEMATIC SYMBOLS FOR TRANSFORMERS	C 156 C2-29 DO YOU REFER TO IMON COME SCHEMATIC STMBOLS FOR	C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC		SCHEMATIC SYMBOLS C 159 C2-32 DO YOU DETERNINE OF HEFEN TO THE TYPE OF CORE IN	TRANSFORMERS YOU MORE WITH C 160 CR-03 DO YOU REFER TO ON USE THE GENERAL RULE THAT THE	THE STEP OF STEP OF STEP OF	FOR TRANSFORMENS C 162 C2-35 DO YOU CALCULATE VOLTAGE HATTUS FOR TRANSFORMERS	USING TURNS RATIOS C 163 C2-36 DG YOU CALCULATE CURRENT RATIOS FOR THANSFORMERS	USING TURNS RATIOS 164 C2-37 DOES YOUR JOB INVOLVE ANY	5	166 C2-39 DO YOU CLEAN OR LUBRICATE	167 C2-40 DO YOU ADJUST THREE PHASE	C 168 C2-41 DO TOU TROUBLESHOOT THREE PIANS TARNSFORMERS	TRANSFORMERS	PARTS SUCH AS AINUINGS	171 C3-01 DG YOU US, OR REFER TO	REFER TO PETENTIVITY	NATERIALS 174 C3-04 DO TOU USE ON REFER TO PELUCTA (CE OF P	175 C3-05 DO YOU USE ON HEFEH TO	MATERIALS 174 C3-U6 DO YOU USE ON REFER TO PESIDUA.	CHACK DO YOU USE OF PEFER TO HAGHETIC	C 178 C3-UB DO YOU USE OR PEFER TO PEBER'S THEORY OF MAGNETISM

un.	0 7 5	50		0	D	0	9	RCL CIRCUITS	3	250	3	D.	o	D	0	3	3	0.5	э	3	20	3	0.5	20	
SPC						001 6			2 50	40 5		9 50											24 5	8	
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3		2 2		7	3	74	3	30	72	12	4	*	36	36	36	32	32	56	25	25		2	*	•	
SPC	00	00		1.7	1.7	11	D	C	0	C	C	0	0	0	٥	6	,0	c	C	O	i)		c	0	
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386	2 7 0	4 4		56	52	7	30	88	4	45	40	4 3	2.4	7.	5.2	-	22	0	7	5	37	17	7.8	53	
401-10	C3-09 Do YOU USE ON REFER TO	141 C3-11 DO TOU USE	MAGNETIC POLES,	C 183 C3-13 DC YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIMECTION OF MACHETIC FIELDS ADOUT STRAIGHT WIRES	USE THE LEFT HAND THUMB RULE TO	D 185 DI-01 DO YOU WORK MITH RC. LH, RCL CIRCUITS IN YOUR	U 185 01-UZ DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH PCL	CINCUITS 0 187 E1-U3 DO TOU USE ON REFER TO PYTHAGONEAN THEOREM WHEN	MERRING WITH REL CIRCUITS INE WHEN WURKING WITH RCL	CIRCUITS 189 D1-05 DO YOU USE	CIRCUISS USE OF PEFER TO TANGENT WHEN ADRING WITH MCL	161	S 192 DI-DE DO YOU USE OF REFER TO TRUE PORER (PT) WHEN SOHKING	U 193 DI-LUO DO YOU USE OF HEFER TO MAXIMUM POWER (PM) AHEN	350 001		D 195 DI-12 DO YOU USE OF REFER TO POWER FACTOR (PF) WHEN WORKING	0 2	3	THE CIPCOITS OF REFER TO SELECTIVITY WHEN WORKING WITH	D 200 DI-16 DO TOU USE OF PEFER TO RESONANT FREQUENCY WHEN	G 201 01-17 DO USE OF REFER TO HALF POREN POINTS THEN		AITH RCL CIRCUITS 0 203 01-19 00 YOU USE OR REFER TO CIRCUIT & WHEN BORKING BITH RCL CIRCUITS	

PLT MBRS HESPONDING "TES" BY SELECTED GRPS

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TASK GROUP SCHMALY PERCENT MEMBERS PERFURNING

SPC 3PC SPC SPC SPC SPC SPC SPC SPC 124 122 133	46 44 60 14 17 52 47 100	29 28 40 14 17 44 24 50	14 14 20 15 0 26 10 50	22 21 40 14 6 32 19 0	15 16 0 0 0 28 15 0	19 18 40 14 0 28 16 0	0 01 02 0 0 0 11 01	0 01 82 0 0 0 28 10 0	18 19 0 14 0 32 16 0	16 17 0 14 0 32 13 6	24 23 40 14 0 30 21 6	12 12 20 6 6 24 19 6	14 13 40 14 0 24 10 0	22 21 45 14 0 32 19 0	60 57 33 68	55 54 80 57 33 54 52 100	36 20 57 33 52 31	1 1 0 0 0 15 0	19 18 40 14 17 32 13 0	22 21 40 14 0 36 18 0	19 16 40 14 0 32 15 0	20 27 0 14 0 44 24 11	16 17 0 14 0 32 13 -	21 20 79 0 0 30 16 3
DY-15K		D 205 DI-21 DS TOU DETERMINE VALUES OF TRICONOMETRIC FUNCTIONS	USING FORMULAS U. 206 DI-22 DO TOUD DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	0 207 DI-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE	D 208 DI-24 DO TOU CALCULATE PHASE ANGLES SETWEEN IMPEDANCE AND HESISTANCE IN CAPACITIVE CIRCUITS	D 204 DI-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES ACL	U 219 DI-ENDITS U 219 DI-END CALCULATE IMPEDANCE ANGLES FOR SERIES MCL	U 211 CI-20 TOU CALCULATE APPARENT PUMEN (PA) FOR SERIES RCL	D 212 DI-20115 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES PCL	D 213 01-2013	U 214 DI-20 DG YOU CALCULATE TOTAL CURRENT FOR PARALLEL HCL	D 215 DI-ACUITS D 215 DI-AC TO YOU CALCULATE, IMPEDANCE ANGLES FOR PARALLEL, RCL	D 216 D1-32 DG TOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL MCL	U 217 D1-33 DG YOU CALCULATE TOTAL IMPEDANCE FOR PAHALLEL MCL	01-34 00	D 214 01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION OF 220 01-36 DO YOU CHECK INDUSTORS USING DAMMETERS	221 01-37 30 73U CHEC	U 222 DI-38 DO YOU USE ON REMEM TO THE GENERAL MOLE THAT	O 223 01-39 0; YOU CALCULATE RESONANT FREGUENCIES FOR RCL	U 224 DI-40 DO TOU USE OR HEFEN TO THE GENERAL RULE THAT THE RESCHANT	FREJUENCY FOR SEMIES MCL CINCUITS D 225 D1-41 DO YOU USE OF MEREN TO THE GENERAL RULE THAT LINE CURRENT IS FINIALM AND IMPEDANCE MAJIMUN AT RESONANT FREGULENCY FOR DARKELL BY CHACLITS	D 226 DI-42 DO TOO USE ON REFER TO THE GENERAL RULE THAT HALF PLATE POINTS AND AT 70.7 PERCENT OF THE PLAK CURRENT VALUE	RULE	D 228 DI-14 DO TOU DETERMINE HOM CHANGES IN FREQUENCY, RESISTANCE AND CARACLE AFFECT CURRENT OF PHASE AND FOR PERSONAL PROPERTY OF PHASE

TASK GROUP SUMMARY PERCENTING

	SERIES AND PARALLEL RESONANCE	(TIME CONSTANTS)																		301111	FILIERS																	
SPC 133	50	30	3	2	20		D	20		C			20		u	2	-	00	001	20.5	20	5	100	100	200	c	0 0	0	2	001	20	20	200	٠.	20	20	20	
5PC 133	65	17	71	11	2.1		,	0 (4		~			m		-	:		2	4	2.0	2.	9	99	73	9	;		7	ř	27	30	30	37	47	·	32	2,	
5 P.C.	7	9,	20	88	5.5		36	35		3.2		4	28		Un	2		æ	14	2.5	9	9	90	36	10	43	0 4	25	0	50	25	25	*	35	30	*	36	
SPC - 3c	o	0	0	d	0		c	0		c			a		,	0		33		17	33	33	33	33	33			1 1	17	11	0	C	0	33	0	0	O	,
SPC	62	67	*	50	5		9	0		C	,		3		c	•		1.		0 0	43	56	43	43	53		7 7	29	58	+	43	43	50		÷	4.3	39	
SPC 12A	0.8	080	0.0	0.0	9		4	80		•	,		9		4	2		80	a	2 2	9	00	80	0.8	08		7	7	10	0	70	0.9	90	0	0.0	9	90	
127	37	31	2.1	10	27		-			1.0			•		:	-		16	*	9 30	58	9	9	10	09		ר ט זי פ	4	36	56	3	0	35	27	3	34	28	
5 P.C	3.6	33	5.3	9	30		:	2 2		2	:		=			•		1.		7	200	6.5	6.7	7.0	-		7 2	4.5	3.0	2.7	34	7	37	36	32	35	36	
27-756	PRESENT JOB, DO TO	222 22-22 DO YOU WORK WITH, USE, OR REFER TO	231 02-03 00 700 #08K #17#, USE, ON REFER TO	03-04 00 100 WOAK #17H, USE, OR REFE TO	INTERNALS	CAPACITOR 15 FUL	TIME CONSTANTS (TC)	TO SETERNINE	CINCUIT CURRENT OR COMPONENT VOLTAGES	TINE FOR AC OR LA CIRCUITS	2 2	PLACH SPECIFIC VALUES FOR PC OF LA CIRCUITS	U 237 02-09 00 YOU USE EVUATIONS OF FORMULAS TO DETERMINE	CUMPONENT VOLTAGES TO PEACH SPECIFIC VALUES IN SPECIFIC	11465	IN LM CIMCUITS PEACHES ITS MINIMUM VALUE (ON ZENO) AFTER		0 239 03-01 DO YOU MORK MITH CIRCUITS USED AS FILTERS IN YOUR	PRESENT JOB		241 03-03 00 100 CLLAR FILER LIFE	AND DESCRIPTIONS AND TRANSPERSHOOT TO THE FILE	244 03-06 00 You Tenuelfswoot 10	245 03-07 00 YOU REHOVE ON MEPLAC	03-08 DO YOU REHOVE OF REPLAC	PANTS	247 03-09 00 100 MORK WITH	200 DO DIEGO 077	TIE SECTION OF STATE OFF	251 G3-13 DON'T PEMEMBER MHICH TY	03-14 DO YOU WORK #17H L-SECT	453 03-15 DG YOU #08K	254 03-16	255 03-17 DON'T PEMEMBER WHICH TYPE FILTER	250 0	CINCUITS D 257 33-19 DO THE FILTEMS YOU MORK MITH USE SERIES-PARALLEL	CINCUITS AND DARK IN THE PLANT OF STREET AND	CINCUITS

PET MBHS RESPONDING TEST BY SELECTED GHPS

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TASK GHOUP SUMMANT PERCENT MEMBERS PERFURNING

		COUPLING									SOLDERING									
5 P.C.	53	100	901	20	3.0	2 C	100	100	9 o	001	50	200	200	3.5	00	200	100	100	100	100
350	5.4	• •	2 5	9	5,5	14	D 0	t.	56 16	•	40	0 0 0 0 1	60		v 0.	7 6	. 5		9	37
586	9 E	0 0	2 0	9	55	20	00	*	5.5	7 9	200	00	00		0	76	9.5	25	ac ac	2
5 PC	80	1.1		17	1.7	1.7	11	1.7	33	001	30	100	100		100	100	100	83	6	67
5PC	- 2	3 5	67 67	-	=	<u>.</u>	4 4 9 4	58	£ 0	1,	2.2	7.7	7.	7	::	2 2	:	57		-
S P C	00	001	100	90	8	0.60	001	100	0.0	001	9 0	001	001	9 9 9	30	000	100	100	100	100
5 P C	77	65	\$ 55	5	*	\$	55	*	16	12	6 5	0 0	5 0	3	7	90 O	63	9 5 9	2.8	3.6
5 PC	2.5	5 -	5.	9	\$0	\$ 5	55	45	53	7.8		0 0		. 7		4 67	43	0.0	40	7
0Y-15K	0 259 03-21 DON'T KEMEMBER WHICH TYPE OF BASIC CIRCUIT 0 260 03-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE, VALUES REWOIRED FOR SPECIFIC FILTHE	E 261 E1-01 DO YOU MORK WITH COUPLING DEVICES IN YOUR PRESENT JOL. E 262 E1-02 DO YOU LOENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE COUPLING	DN SCHEMATIC DIAGRAMS AND THE COMPUNENTS ASSOCIATED ON SCHEMATIC DIAGRAMS AND	THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING E 265 E1-05 DU TOU TROUBLESHOOT CIRCUITS WHICH MAVE COMPONENTS	NATUR PERFORM AC COUPLING L 266 E1-00 DO YOU ROUGLESHOOF CIRCUITS, WHICH HAVE COMPONENTS ENTER PERFORM IMPROVEMENT OF THE LAG.	- 2		E 270 EINTO DO YOU NORK WITH CAPACITIVE-INCUCTIVE COUPLED CIRCUITS		E 273 EZ-DI IN TOUR PRESENT JOB, DO TOU PERFORM SOLDERING FELMINAGE OF MOSPECT OF EVALUATE SOLDERED CONNECTIONS E 274 EZ-DO TOU TOUR THEFT TO USE	62-03 00 YOU ADD FLUX TO C	277 E2-05 DO YOU STHIP INSULAT	279 EZ-07 DG YOU BEND OR SHAPE	EZ-59 DO TOU FILE OR SHAPE	283 E2-11 DG YOU CLEAN SOLDERING 183N 1175	E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ENESERS JES E2-13 DO YOU TIN OR PRE-TIN CONFUCTORS	28A EZ-14 DC YOU INSPECT SOLDERED CONT	287 E2-15 DO YOU DESOLDE! CONN	100LS 289 E2-17 00 YOU CUT COMPUNENT LEADS T	EZ-18 DO YOU CRUSH COMPONENTS FOR BEMOVAL

										RELAYS																									3270000000	MICKUPHUNES												
105	133	100	001	201		100	00	200	200	0.	201	001	100	200	20	20	0	20	20	2	100		001		001		100		201	100		001		001	001	100	Э			100	100	100	301	0	20	0.5	2	
SP	7 7	42	41	30			0		0	0	6			\$ 2			<u>u</u>	5	90	11	10		16		6.9	1	7.1	,	0	9		190	,		6.	6.5	9			35	10	•	3	æ	-	*	7	
200	131	76	96	90		6	40			20 .	9 6	96	28	45	20	09	2.4	54	98	0	16		15		99		0	•	12	4		26			0	76	16			30	0.5	30	28	9 2	35	9 9	9	
SPC	130	100	100	100		001	4.3	0	00	2	67	£ 3	11	20	20	33	0	0	0	0	67		67		67		47	•	۳ ت	50	,	63		6	67	63	90			20	63	20	20	0	0	1.1	d	
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SPC	128	100	100	100		100	001	2	2 :	2	09	100	9	90	50	20	0	50	50	၁	100		100		100		100		001	100		100		0	0	001	0			90	00-	9	0 9	0	07	08	0	
SPC	121	-	96	96		96	00	9 4			80	76	53	78	53	2.	13	•	6 1	58	16		15		20		1.1	•	0	6.7		8.2		71	9	33	9			34	11	37	36	7.	9 -	•	2	
SPC	120	6	9.6	96		96	0	2 :		9	0 0	26	54	8	21	25	13	9	6	27	11		16		1.		7.5	•	6	69		63		2	19	30	7 0			35	78	39	3.6	=	•	£	2	
	LY-15K	291 £2-19 Do YOU	EZ-ZU DO TOU MAKE PRINTED CIRCUIT BOARD CONMEC	293 E2-21 DO YOU	CAPACITORS ON PRINTED CIRCUIT	E 294 E2-22 Do 700 SOLDEM ACTIVE COMPRANENTS SUCH AS SOLID-STATE	DIGGES ON INANSISIONS ON PRINT	CAP ES-UT DO TOU WORK WITH RELATS U	246 23-62 00 100	297 E3-03 DO 100 CLEAN RELATS	E3-04 DO YOU INSPECT RELAYS	244 €3-05 00	300 E3-06 DO YOU REMOVE ON REPLACE PARTS OR	E3-37 DO YOU TROUBLESHOOT RELA	302 E3-GE DO YOU STRAIGHTEN RELAY	303 E3-09 DO YOU PENFORM TASKS ON MELAY	304 E3-10 DO YOU PERFORM TASKS ON RELAY	305 E3-11 DO YOU PENFORM TASKS ON NELAY	306 E3-12 DO YOU PERFORM TASKS ON RELAY	TOU PERFORM TASKS ON RELAY	304 63-14 00	(15951)	E 309 E3-15 DO YOU USE OR REFER TO SINGLE FOLE, SINGLE THROM	(15951)	E 310 E3-16 DG YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW	(SPOT) S	L 311 E3-17 DO YOU USE ON MEFER TO DOUBLE POLE, DOUBLE THRU-	LUPOTI SCHEMATIC SYMBOLS FOR RELAYS	E 312 E3-18 DO YOU USE ON REFER TO OTHER RELAY SYNBOLS SCHEMATIC	E 313 E3-19 DO YOU CHECK FIRETRICAL CONTINUITY OF COILS BY	MEASURING RESISTANCE	F 314 FI-01 IN YOUR PRESENT JOB. DO YOU PERFORM ANY TASKS DEALING	1	315	1-03 00 ton	FI-04 DU YOU OPERATE MICHOPHONES	314 FI-05 DO TOU TROUBLESHOOT AS FAR AS CHECKING	CORNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	PARTS OR MICROFHOMES	319 F1-06 DG YOU TROUBLESHOOT DOWN	320 F1-C7 DO YOU	321 FI-UB DC YOU REMOVE OR REPLACE	322 FI-09 DC YOU PERFORM TASKS ON C	FI-10 DO TOU PEHFORM TASKS ON C	324 FI-11 DO YOU PENFORM TASKS ON C	FI-12 DO YOU PEHFORM TASKS ON DYNAMIC !	O YOU PERFORM	

PCT MBHS MESPONDING TEST BY SELECTED GRPS

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TASK GROUP SUMMANY PERCENT MENBERS PERFORMING

	SPEAKERS																		OSCILLOSCOPES															SEMICONDUCTOR	DIODES					
5PC 133	901	100	50	20	100			0	100	3	90	၁	כ	2	0	30	100	20	00		001	0	100	0	100		00	100	100		50	•	200	0 0	201	ņ	30		9	
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5PC 131	12	*	8 7	09	•			1.5	99	•	15	15	?!	9	5.4	5.	100	9.5	7.5		9 8	4	10	*	86	•	80	92	3	ć	96	;	2 0		E :	20	3.2		*	
5PC 130	50	20	33	33	90			0	90	a	11	O	C	٥	17		9	100	100		100	101	00	17	90		63	100	63		100		001	2 0	001	C.	17		a	•
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5 P C	100	001	7	90	100			0	100	a	50	0	0	0	ס) C	100	000	100		100	a	9	70	90		001	100	001	00	00		001		2	0	7		00	
5PC	67	9	4	79	28			-	15	13	~	*	1	30	- 3	=*	90	5 6	9.3		43	6	6	47	65		96	9.5	9		8		200	0 0	2	•	24		26	
5PC 126	•	6.3	4.0	63	9			1 5	59	12	13	7	^	20	12	2 *	20	6	9		93	0	2	*	9.5	ć	9.	9.5	8.	6	80 90		9 0	. 6	2 0	•	25		30	
Dr-15K	F 327 F2-01 IN YOUR PRESENT JUBS DO YOU PERFORM ANY TASKS DEALING WITH SPEARERS	328 F 2-02	F2-03 00 100	330 F2-04 00 100	F2-05 00 700 TROUBLESHOOT A	CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	PARTS OF SPEAKERS	FZ-US DO TOU TRUUBLESHOOT DOWN	REHOVE OR REPLACE COP	334 F2-08 US YOU REHOVE ON REPLACE	F2-09 DO YOU PEHFORM ANY TASKS ON SPLAKER	336 F2-10 DU TOU PERFORM ANY TASKS ON SPEAKER	337 FZ-11 DO TOU PENFORM ANY TASKS ON SPLAKER	338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER	339 FZ-13 00 YOU PENFORM ANY TASKS ON SPEAKER	F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	AND THE PROPERTY OF THE PROPER	343 F3-02 DG YOU USE OSCILLOSCOPES TO PERFORM OPERI	TOU USE OSCILLOSCOPES TO	AUJUSTHENTS	F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC	144 F 1-05 00 YOU USE	F3-36 DO YOU USE USCILLUSCOPES TO MEASURE	348 F3-07 DU YOU USE OSCILLOSCOPES TO OBSERVE	USE OSCILLUSCOPES TO UBSERVE	UTILIZING ATTENUATOR PROBES	THE STATE OF THE CONTRACT OF THE THE THE PARTY OF THE	351 F3-10 00 YOU USE OSCILLOSCOPES	F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OF OBSERVE	SIGNALS AFTER FINST ADJUSTING THE GAIN AND DE BAL CONTROLS	L 354 61-61 DO YOU MORR WITH SEMICONDUCTOR DIODES IN YOUR PRESENT	٥٥٦	355 -1-02 50 100	200 00 10 10 10 10		158 61-15 BSE	SEASON OF SEASON OF THE CONTRACT OF SEASON OF	TOURTHER MITH VALUES OF FORMAND AND REVERSE BIAS	COMPOSE FURNIAND OF MEMERSE LIAS MESISTANCE FOR COMPOSE FOR STANCE FOR	DIODES

PCT MERS HESPONDING .TES" BY SELECTED GRPS

TASK GROUP SUMMARY PERCENT MEMBERS PERFURMING

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TASK GROUP SUMMARY PERCENT MEMBERS PERFURNING

																													TRANSISTORS			
5PC 133	D	0	Э	o	3		9	0	3	200	0	2	د		٥	9	100		3	100			20	701	100		200	00	100	001	100	
5°C	5	•	ŗ	s	-	2	ut	17	:	7	7	7	•		0	-	32	•	~	•	-	70	?	50	3.3		67	•	9.5	67	40	,
500	5,	24	32	9.2	36		26	26	:	25	28	38	20		2 B	9.2	7		2.4	7.5	2	'n	7	3	5.2		00 C	8	20	10	65	
3 MC	٥	0	c	c	11		a	0	;	7 6	17	17	c	,	0	ŭ	5.0		0	83	:	-	17	17	-		001	100	100	44	47	
5 PC	0	7	၁	0	3		a	0	3	7	*	7	0		<u>.</u>	0	5		0	ç	3	2	5.6	7	7		9 9	4	4	8	9.0	
5 P.C	50	50	50	50	40	•	70	53	1	0 4	0	0	3	ı	9	•	9		50	100	001	2	90	100	100		100	00	001	100	100	
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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

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TASK GROUP SUMMARY
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PCT HARS RESPONDING .YES. BY SELECTED GRPS

TASK GROUP SUNMARY PERCENT MEMBERS PERFORMING

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PCT MBAS RESPONDING TEST BY SELECTED GRPS

GPSUM6 PASE 21

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

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PCT HBRS RESPONDING TEST BY SELECTED GRPS

GPSUMA PAGE 22

TASK GROUP SUMMARY
PENCENT HEMBERS PERFURMING

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pr-15k	SHE 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRICOE	-		16, MHICH IS MEASURED IN MHOS) 589 13-25 DO TOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE	540 13-25 DO FOU USE OF REFER TO THE ELECTHON TUBE PARAMETER	591 13-200 TOU CALCULATE ACTUAL VALUES OF AC PLATE	592 13-231 SO YOU USE ON REFER TO FLECTHON TUBE INTERFLECTRODE	USE ON MEFE	YOU USE CHARACTE	USE CHARACTE	SYMPONIA SPECIFIED BIAS 594 13-12 DG YOU USE CHARACTERISTIC CURVES TO SELECT BIAS	547 13-33 DO TOU USE CHAMACTERISTIC CURVES TO SELECT BIAS	REGULARD FOR SATURATION 598 13-34 DO TUBE AMPLIFIER GAIN 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER	EFFICIENCY	TUBE AMPLIFIER GAIN, 601 13-37 DC TOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE	AMPLIFIER GAIN 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE	AMPLIFIER GAIN 603 13-39 DG TOU USE CHARACTERISTIC CURVES TO DETERMINE	ELECTRON TUBE AMPLIFIER GAIN 604 13-40 DG YOU CALCULATE ANY ELECTHON TUBE CAPACITANCES SUCH		13-42 DO TOU USE OF REFER TO PIN NUMERAING SYSTEMS	607 13-43 DU YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATIONE OF THE EMITTING SURFACE IN THE FIFTHER OF THE EMITTING SURFACE IN THE	æ -	604 JI-01 DG YOU WORK MITH ELECTRON TUBE AMPLIFIERS ON CIRCUITS	ELU JI-UZ DO YOU DETERNINE THE CLASS OF UPERATION FOR ELECTRON TUBE AMPLIFIERS IN CROER TO TROUBLESHOOT AMPLIFIER CLIRCUITS

			1						
PCT MBRS RESPONDING TEST BY SELECTED GAPS	-	ā	STSUMB FAGE	LAGE	2				
TASK GROUP SUNTARY PERCENT ARMBERS PLAFORMING									
Dy-TSK	5PC 120	5 P C	5 P.C	5 PC	5°C	SPC 131	SPC :	5PC 133	
J 411 J1-J3 DG YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	• 0	• 0	20	- 62	o c	e 2	J. To	0 0	
613 JI-US DO YOU THOUBLESHOOT OR REPAIR COMPOUND-	•	۰	0	*_	c	20	-	0	
J 614 JI-G6 DO YOU THOUBLESHOOT OR PEPAIR CASCADE COMMECTED	0.1	=	0	58	٥	~	01	•	
J 615 JI-G7 DOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	•	90	0	<u>.</u>	11	0	2	э	
J 616 J2-01 DC YOU WORK WITH GAS TUBES THUT CATHUDE OF COLD	-	5	9	7	-	•	nu	20	
617 JZ-02 DO YOU WORK WITH CATHODE-KAY TUBES	43	6	9	2,	19	56	7.	75	SPECIAL PURPOSE
J2-03 DO YOU	15	2	0	9	11	5.2	9	2	ברכונים ומרכ
	51	•	0	0	33	5.	13		
POWER TUBES ARE USED J 620 J2-US DO YOU USE ON MERER TO THE CHAMACTERISTICS OF	200	40	0	56	.1		~	þ	
THYRATHONS	•	4	•	0	:				
THERETONS ARE USED	•	•	0	,	:	:	2	,	
TO THE PHINCIPLES OF OPERATION	0r 36	36	4.0	£,	67	œ 7	23	25	
F CATHODE-KAY TUBES (CRT) ON REFER TO THE PRINCIPLES OF OPERATION	96 39	39	40	51	67	2	3,1	20	
ELECTROMAGNETIC DEFLECTION S									
TO THE PRINCIPLES OF OPERATION	32	32	0	5.7	67	36	57	75	
ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-PAY TUBES									
625 JZ-10 DC YOU USE	37	38	50	7	10	55	50	3.	
624 JZ-11 DU YOU USE OR PEFER TO AQUADAG COATIN	52	52	50	23	200	0	13	20	
J 627 JZ=12 DO TOU USE ON MEFER TO ELECTRON OPTICS	0 .	3.	0 7	5 5	20	25		30	
J2-14 DU TOU USE OF FEFER TO	5.6	29	707		67	32	23	20	
630 JZ-15 DO YOU USE ON REFER TO	2	5 2	0	7:	200	O 4	7.	0.6	
US-10 DO YOU ADER ON TRANSM	7	: -	2	,0	2 2	7		35	
PRESENT JOB 633 J3-02 DO YOU PERFORM TASKS ON FREGUENCY CONVENTIRES	•	•					! =	0	HETERODYNING,
634 J3-03 DO YOU PEHFORM TASKS ON FREUENCY	. 10	20	0	0	0	.00			DEMODILI ATTON
25 US-04 CO TOU USE OF THE THE	7	N	0	0	a	•	7	э	
TOU PERFORM TASKS ON REACTANCE	S	٠.	0	0	d		5	۰	
637 J3-06 00 YOU PEHFORM TASKS ON HODULATED OSCILLATORS	•	s	0	0	0	•	. •	0	
K 638 KI-DI DC YOU WORK ON AN TRANSKIT OF MECEIVE SYSTEMS IN YOU	5 20	-	97	0	c	•	٠,	20	
000	•	•	0	0	a	•	'n	.)	AM SYSTEMS
AND RI-DE DO YOU CLEAN AN TRANSHIT OR RECEIVE SYSTEMS			0	00	c		n.	5 5	
00 -00 -12 149	3	•	0	Э.	d	•	7		

TASK GAOUP SUMMARY
PERCENT MEMBERS PERFORMING

187-10	126 127	7 129	124	130 1.	131	132 -	133	
U TROUBLESHOOT TO AN THANSHIT ON RECEIVE U TROUBLESHOOT TO AN TRANSHIT OF RECEIVE	SYSTEMS	30	30	00	7.1	O G	J J	
COMPONENTS A 644 RIFOL DO YOU FEHOVE OF REPLACE AN TRANSHIT OR MECEIVE	,	5	0	c	,	u	•	
A 645 KI-00 YOU REMOVE OR HEPLACE AM TRANSMIT OR MECEIVE	·	° °	٥	5	,	~	.3	
646 KI-UT DO YOU PENFORM TASKS ON RF	•	0 6	0	C	,	3	د	
647 KI-10 DG TOU PEKFORM TASKS ON	~ -	90	0 0	0 0		~ ~	3 3	
ALO KILLI ON YOU PERFORM TASKS ON POREN	•	•	0		7	. ~	0	
650 KI-13 DO YOU PENFORM TASKS ON LOCAL	•		0	0	.	7	3	
K 651 KI-14 DO YOU PERFORM TASKS ON IN AMPLIFIERS	7 •	7 6	3 0	00	3 #	~ ~	2 0	
653 KI-16 DO YOU PENFORM TASKS ON DON'T HEMEMBER WHICH AM	STAGE 3	3	0	a	0	,	ن	
654 KI-17 DE YOU USE ON HEFER TO AMPLITUDE STADILIZATION	- 2	0 1	2	0	3	~	5	
TRANSMITTERS NO USE ON REFER TO FREQUENCY STABILIZATION IN	2	0 7	0	C	7	7	C	
74 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15								
656 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF	•	0 6	0	0	.	•	5	
957 KI-20 30 YOU USE ON REFER TO	7	9 5	0 :	9	,,	n 1	3 :	
658 KI-ZI DU 700 USE ON KEFER TO	, -	, ,	٥ د			~ ^	5 -	
	-	•	0 0	a c		7 0	2 2	
TANNAHUTOL OF RESERVE TO SOUTH OF THE TAN	. 7		0	0 0		٠, ٠		
A1-25 DO YOU USE OR HEFER TO IMAGE FRESU	I VERS I	0	0	0	0	~	O	
663 KI-Z6 00 YOU USE UR	-	0 1	Э.	0	2	7	3	
R 664 KI=27 DC YOU TRACE SIGHALS OR CURRENT PATHS THROUGH AM	•	0	0	0	,	2	2	
TRANSMITTER SCHEMATIC DIAGRAMS								
K 665 KI-28 DO TOU TRACE SIGNALS ON CURRENI PAINS THROUGH AN	•	n	د	0		-,	,	
K WITH FH TRANSHIT OF RECEIVE SYSTEMS I	1 11	07 9	0	c	œ	•	0.5	
YOUR PRESENT JOB					5		٤	
KZ-JZ DC TCU INSPECT PH THANSHIT			0 0	0 0) :	• .		FM SYSTEM
AS SALES OF THE ASSET OF THE PROPERTY OF SECRETAR ST	• •		ככ	5 0	, ,	n s		
K2-05 D. YOU TROUBLESHOOT TO FIN THANSHIT OR	•		0	00	90	, w		
SYSTEMS STORY THRUBLESHOOT TO FM TR	•	•	O	c	v	,	9	
COMPONENTS CONTINUES OF LIBERAL TRANSMITT OF		,	c		,		0	
TOO TENENT ON METINE PRINCIPLE OF			>	3		n	,	
E 673 K2-08 DU TOU REHOVE OR REPLACE FM TRANSMIT OR RECEIVE	٦	3 0	0	0	no	~		
674 K2-09 DC TOU PERFORM TASKS ON	,	0	0	0	æ	υ	J	
42-10 00 TOU PERF		•	0	. 0	•	,n	9	

PCT MBRS RESPONDING TEST BY SELECTED GNPS

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TASK GHOUP SUMMARY PERCENT MEMBERS PERFORMING

													CALCULA	SYSTEMS											300000000000000000000000000000000000000	LUGIC FUNCTIONS														
SPC	133	3	0	3	0	2	0	2	0		3	100		100	100	100	707	100	100	50	100		100	001	100		100	100		100	100		100		200	100		2 0	200	
SPC	132	2		•	Ji	'n	~	•	9		٥	96		45	67	6	8.5	92	84	63	9		11	8 1	25		5.	55		25	4	,	9.2		3	9		0 6	202	
SPC	131	20	4	7	30	•	10	3 0	•		10	3		9	96	96	96	96	88	90	9	,	8 6	F 3	3		9	5.2		0 9	9	,	0.9		25	2.6		# # © (
SPC	130	a	O	c	o	0	a	0	a		a	100		100	100	100	100	100	100	83	100		83	001	ç		83	83		20	80	•	83		3	6 3		6.0	6. 6	;
SPC	129	0	0	٥	0	0	0	0	0		0	57		11	57	57	11	57	7.1	57	7.7		57	11	57		57	5.7		23	23		57	,	25	57		7.		
SPC	128	a	0	0	0	0	a	0	a		0	09		0	90	80	80	0 9	90	0.0	9	2	90	0.0	0		0 8	0.8		90	0.0	,	0.0		0	0.0		9 9	9 6	3
200	121	v	1	3	2	'n.	*	*	v		٥	98		0	89	06	26	-	85	9	7.4		10	78	5.8		φ Φ	26		26	*		5 9		7	4		9 0		9
SPC	120	S	1	ď	Ω.	5	7	•	s		•	985		60	90	0.	16	00	9.5	99	7.4		7.9	29	59		29	15		5.7	4		6.5		6.2	95		6 6	0).).
	0Y-T5K	K 676 K2-11 DO TOU PERFORM TASKS ON DRIVERS (INTERMEDIATE	K 677 K2-12 DU YOU PEHFORM TASKS ON POWER AMPLIFIERS	678 x2-13 DO YOU PEAFORM TASKS ON RE AMP	679 K2-14 DO 70U	680 K2-15 DO YOU PERFORM TASKS ON	681 K2-16 00 YOU		K 683 K2-18 DO TOU TRACE SIGNALS OR CURRENT PATHS THROUGH	SCHEMATIC DIAGRAMS OF FM TRA	X 584 X2-19 DO YOU THACE SIGNALS OR CURREN! PATHS THROUGH	K 665 K3-01 DO YOU CONVENT DECIMAL (BASE 10) NUMBERS TO SCIAL		K 686 K3-U2 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2)	TOU CONVERT	688 K3-04 DO YOU CONVERT	x3-05 Do YOU	690 K3-06 DO YOU COLVERT	169	K3-U8 DO YOU SUBRRACT BINARY NUMBERS USIN	CARRY METHOD CA	The state of the s	A 694 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	L 695 LI-UI IN YOUR PRESENT JOB, DO YOU PERFORM ANY LASKS	L 696 LI-UZ DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC STMBOLS.		L 697 LI-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS	L 698 LI-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND ON OR LOGIC	STABOLS WITH STATE INDICATORS	L 699 LI-US DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OF LOGIC	STREETS OF CATES	SYMBOLS ON GATES	L 701 111-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OF LOGIC	SYMBOLS OR GATES	1 702 111-08 DO TOU USE OF REFER TO TRUTH TABLES FOR AND ON ON	L 703 LI-09 DO YOU USE OF MEFER TO TRUTH TABLES FOR EXCLUSIVE OR	LOGIC SYMBOLS	704 L1-10 DO 700 USE OF PEFER TO LOGIC	PEFER TO LOGIC STABOLS FOR	GATES

PLT MBRS RESPONDING .YES. DY SELECTED GRPS

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TASK GROUP SURMANY PERCENT MEMBERS PERFORMING

		BOOLEAN	EQUATIONS																					
133	100	001	3.0	100	100	100	100	5	3	100	100	100	100	201	20	100	136	000	00	100	200	200	202	201
135	23	18	-	-	2,	♦ 3	24	53	77	9.	7	5 5	50	9	0	5	•	4 1	5.0	5.5	6	•	•	*2
.; 3	4	52	30	36	40	2.0	25	40	32	0.0	5	32	D	9		•	*		7	;	99	\$	25	å
130	83	14	90	50	50	67	19	67	67	67	50	5.7	19	67	•	67	6.1	67	67	67	6.1	6.7	6.7	• 1
2.5	1.	64	58	-	13	4 4	4 3	50	9	5.7	6.7	4 3	7	5.7	?	23	15	57	57	51	57	23	15	50
179	0.9	080	09	9.0	80	9 0	9	5	09	0.8	9	80	0,0	9	6	0.0	30	0.6	90	0.8	9	8.0	90	0.6
137	2	19	2.4	23	ž	• •	5.5	7	23	9	*	55	20	*	3	4	62	4 4	53	5	67	7	0	;
15.7	1.	6	?	92	36	19	95	*	30	\$ 9	4	5.3	.0	.0.		6 9	63	19	2 %	\$	0	6.2	-	?
01-15K	L 707 L1-13 DG YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE	L 704 LZ-01 IN TOUR PRESENT JOB: DO TOU PERFORM ANY TASKS RELATING TO HOOLEAN ENUATIONS, LOGIC DIAGNAMS, OR LOGIC	L 70% L2-UZ DO YOU DRAW LOGIC SYMBOLS FOR UIRECT COUPLED THANSLYING COLF COLT CIRCUITS	L 710 L2-63 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC	L 711 L2-CH DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN	L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE	L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN.	L 715 L2-UB DO YOU USE ON REFER TO LOGIC SYMBOLS FOR DIRECT	L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE	L 717 L2-10 DO USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF	L 718 LZ-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL	HALF OR FULL ADDEM LOGIC DIAGRAMS L 719 L2-12 DO YOU TRACE DATA FLOM THROUGH PARALLEL FULL ADDER	126 1		722 LZ-IS DO TOU WORK WITH	L 723 L2-16 DO YOU USE OR MEFER TO FLIP-FLOP MULITVIBRATUR	L 724 L2-17 DO YOU USE ON REFER TO SINGLE-SHOT HULTIVIBRATOR	725 L2-18 DO YOU USE ON RE	L2-20 50 YOU USE OR HEFER TO COMPLEHENT	THROLS TOU USE OR RE	STREOLS STREOLS 1 729 L2-22 DO TOU MEASURE OUTPUT MAYESMAPES OF LOGIC CIRCUITS		1 731 L2-24 DO TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-	L 732 L2-25 DO TOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC STREES

TASK GROUP SUMMARY PERCENT MEMBLAS PERFURMING

			COUNTERS																														TIMING CIRCUITS		
SPC 133	100	901	001	100	20	100	20	100	001	2	50		100		20	201		001		100	96		35	001	100	901	2	5.0	50		190	100	20	20	
5PC 132	10	7.5		10	0+	63	47	63	•	+	<i>3</i>		4		97	7		0.5		*	29		50	3,1	ŕ	3	7	11	3,2		82	7	5.5	6.	
SPC 131	16	16	0	*	32	90	26	10	70	72	9		25		34	5.2		7.5		9	7		4	1	36		2	36	5.2		a	*	2.6	4	
5 P C	63	69		63	90	83	6.9	67	61	83	67		83		61	6	2	63		9 0	C	1	20	20	33	3	00	9.0	67		90	33	20	90	1
SPC 129	5.7	57	5.7	5.7	5.7	57	21	2.7	23	7	5.7		57		29	11		43		25	57	,	4	7	5.6	:	-	58	29		7	50	7	?	
5 PC 128	0 6	0 0	9 0	90	90	0 9	09	90	90	a	09		80	1	70	70	3	90		0	9	?	0	90	0	3	ne	0.	9	,	90	0 80	0	0	
5PC 127	75	75	979	63	38	63	25	63	95	55	5.2		15		90	9	2	5,1		20	36	;	36	36	32	a t	0	3.1	30		18	*5	4	5.3	
5PC 120	15	75	6.3	4	39	•	25	7 9	6.9	55	5.5		5.2		0	3		5.0		15	37	;	37	38	*	•	2	32	0.5		84	7	5	53	
0Y-15K	SET TO THE HORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOS	734 L3-02 DO YOU USE ON REFER TO UP.COUNTERS	THE THIRD TO TOO USE OR REFER TO DOWN COUNTRYS	137 13-05 DO YOU USE ON MEREN TO	738 13-U6 DO YOU USE ON REFER TO	739 13-07 00 YOU USE OR REFER TO	740 L3-08 DC YOU USE OR REFER TO COUNT D	DC YOU USE OH REFER TO	742 13-10 00 700 USE ON REFER TO	743 L3-11 DO YOU TRACE DATA	FLOW THROUGH LOGIC DIAGKAN	SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP.	L 245 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF	DECADE COUNTERS	L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DINGHAMS OF	RING COUNTERS	S	L 248 L3-16 DO YOU THACK DATA FLOW THROUGH LOGIC DIAGFAMS OF	SHIFT REGISTERS	1 749 L3-17 DG YOU TRACE DATA FLOW THROUGH LOGIC DIAGRANS OF	OTHER TYPE OF COUNTERS	PULSES FOR UP-COUNTERS HAVING COMPLEMENTED		L 752 L3-20 DG TOU COMPUTE THE BINARY COUNT AFTER SPECIFIE INPUT PULSES FOR SEMIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	PEGISTERS 19- TOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT	PULSES FOR UTHER TYPES OF COUNTERS	1 254 L3-22 DO TOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAPS OF	-	COUNTERS FOR SPECIFIC INPUT PULSES	IN COUNT DETECT CIRCUITS TO INDICATE.	757 A1-01 DO YOU MONK AITH SANTOOTH WAVE GENERATORS	759 11-02 00 700 mosk #17# TRAPEZ	HI-03 DO TOU MORR MITH PULSED OSCILLATORS MITH RE	H 760 MI-JY DC 700 #048 #17# PULSEC OSCILLATORS #17#0UT	REGENERATIVE FLEDBACK

PCI MBRS NESPONDING .YES. BY SELECTED GRPS

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TASK GROUP SURHANT PERCENT MEMBERS PLAFORMING

	12222		USE OF SIGNAL GENERATORS		MOTORS AND GENERATORS	22020333
::	3000	05	100 100	001	001	J. J.
132	1 4 9 6 9	2 D 0	4 4 8 C	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		-24444
1/ 3	3 9 7 7 2	89 08	30 90	2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 44040	
130	W 60 9 4	33 50	22 0	0 0 11 000	50 50 50 50 50 50 50 50 50 50 50 50 50 5	20002700
129	52.7.2	7 1 2	5. 5.	7 2 64 444 2 64 646	2 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	********
1,48	44464	0 0 0	0,00	0 00 000	0 00000	20000000
127	0 0 0 0 0 0 V 0 V 0 V 0 V 0 V 0 V 0 V 0	2 3 2	3	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 3 2 3 4 3	2-2:0:22
120	36.00	- 0 1	37 6	200 200 200	0 0 0 0 0 0	22222222
DY-T5K	H 761 MI-05 DO YOU WORK WITH BLOCKING OSCILLATORS H 762 MI-U6 DO YOU USE OR REFER TO RISE TIME H 763 MI-U7 DO YOU USE OR REFER TO FALL OR FLYBACK TIME H 764 MI-08 DO YOU USE OR REFER TO SWEEP TIME H 765 MI-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SANTOOTH	MAVEFORMS MAYEFORMS	H 743 MZ-01 DO VOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB H 773 MZ-UZ DU YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS H 771 MZ-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL	GENERATORS H 772 M2-04 DO TOU TROUBLESHOOT TO AN ASSEMBLY OF SUBASSEMBLY WHILE USING SIGNAL GENERATORS F 773 M2-05 DO TOU TROUBLESHOOT TO THE SHALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS M 774 M2-06 DO TOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH A 55 SQUARE WAVE, ITHIANGLE, PULSE, OR SPIKE A 5 SQUARE WAVE, THIANGLE, PULSE, OR SPIKE A 5 SQUARE WAVE, THIANGLE, PULSE, OR SPIKE A 776 M2-09 DO TOU USE RF GENERATORS GREATOR THAN 1,000 MM H 777 M2-09 DO TOU USE OF SPICE WAVE OF THE SPICE WAVE	GENERATORS H 774 MATTER TOUR PRESENT JOB. DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS H 780 M3-03 DO YOU CLEAN OR LUBRICATE MOTOMS H 781 M3-03 DO YOU OPERATE MOTORS H 783 M3-04 DO YOU OPERATE MOTORS H 783 M3-05 DO YOU REMOVE ON MEPLACE COMPLITE MOTORS H 784 M3-06 DO YOU REMOVE ON MEPLACE MOTORS H 785 M3-07 DO YOU TRUBLESHOOT AS FAR AS CHECKING WINE	

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																		METER MOVEMENTS										SATIONALE DEACTORS	AND MAGNETIC	AMPLIFIERS					
5 P.C.	J	o	:3		0 0	200	000	00	001	20	001	20	2.0	0.5		100	٦ د	20		3		9 9	100	100	50	100	,	٥	i.	,	o	ى	0		5
5 PC	5	2.	-	u	9 0	, -	7	5	,	;	,	41	7	7,0		24	~	25		53	0	7 7	8.5	7	,r	25	13	-	٥	æ	4)	-	4		•
5 P.C.	•	20	70	:	2 4		2 5	9	9	£	5.5	37	*	5.7		3	35	32		35	ā	0 0	10	•		•	20	20	96	2	3.5	20	2.0		-
5 PC	C	c	G		5.5	2.5	3.5	33	33	33	33	17	11	1.7		9.0	a	c		a	u	3 6	5	1.1	50	50	0	Ö	•	2	O	C	5		c
5 P.C 129	-	54	<u>*</u>		2 2	200	5 2	7	4 3	43	50	52	58	58		96	0	4		*	7 0	2 0	90	4	43	4	-	0	c	•	o	-	0		0
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X21-14	H 794 M3-16 DQ YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE	w	14.5	OH DIRECTION OF THE INDUCED	H3-19 DO TOU NORK AITH STACH	DOON HIM HOW DOL DO DE THE BALL	NAME ASSESSED FOR YOUR WITH SOME COMPINATION OF THE PROVE MOTORS	AND THE STATE OF THE PROPERTY	402 43-24 DO YOU CLEAN OR LUBRIC	AND MB-25 DE YOU OPERATE GENERATORS	BUY H3-26 DO YOU HEROVE ON REPLACE	BUS M3-27 JO YOU REHOVE OR REPLACE		CONFECTIONS OF GENERATORS.	GENERATORS	SOB 41-01 DE YOU MORK WITH METERS IN YOUR PRESENT JOB	NI-CZ DG YOU CONCEPTUALIZE OR	PERMANENT MAGNETS N MICH AND MICHAEL TO COMMINENT THE FUNCTIONS OF	MUVI 46 COILS	N 611 NI-04 DU YOU CONCEPTUALIZE OF CONSIDER THE FUNCTIONS OF	SPIRAL SPRINGS	A SIZ RIPED OF TOO REED METER SCALES	ALT MITTERS OF YOU ZEND CHANETERS	10 × 00 × 0-1 × 1 × 1 ×	816 71-09	SE YOU USE OF REFER TO VOLT	RABLE	AMPLIFIEMS IN YOUR PRESENT JOB N 819 42-62 DO YOU INSPECT MAGNETIC AMPLIFIERS ON SATURABLE	REACTORS	N 820 12-03 DO TOU CLEAM MAGNETIC AMPLIFIENS ON SATURABLE REACTORS	A 871 NZ-CH DO YOU ADJUST HAGNETIC AMPLIFICHS OR SATUKABLE	PERCTORS " HEZZ NZ-US DO THOUBLESHOOT MAGNETIC AMPLIFIERS OF SATURABLE		SATURBLE REACTORS	SATUPABLE REACTOR COMPONENTS

PCT HBRS RESPONDING TEST BY SELECTED GRPS

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TASK GROUP SUMMARY PERCENT NEMBERS PERFORMING

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x27-YU	N 825 N2-68 DG YOU USE OF REFER TO MYSTERESIS CURVES OR LOOPS N 826 N2-69 DG YOU INTERPRET SCHEMATIC DRAWINGS TO BEVELOP OUTPUT WAVEFORMS ACROSS PEACTOR WINDINGS OF LOAD RESISTORS OF	SINGLE WINDING SATURABLE REACTORS IN 627 N2-10 DO YOU MEASURE QUIPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE		MAVEFORMS FOR MAGNETIC APPLITERS. N 629 N2-12 DO YOU USE ON REFER TO COENCIVE FORCE IN SATURABLE	REACTORS IN 830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN	A BOLL NO TOU USE OR REFER TO FLUX DEVSITY IN SATURABLE	REACTORS RESIDENCE OF REFER TO POINT OF SATURATION IN	REF	" 834 N3-01 DO YOU MORK AITH MAVESHAPING CIRCUITS IN YOUR PRESENT	DO YOU USE ON KEFER TO TRANSI	836 N3-U3 DO YOU USE OF REFER TO PULSE WIDTH (PW)	837 N3-04 DG YOU USE ON REFER TO PULSE M38 N3-05 DG YOU USE OR REFER TO PULSE	1.00	43-06 DO YOU USE	N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	AT NA-US DO YOU USE OF PEFER TO THE	HETHER AN LR OR RC CIRCUIT	DIFFERENTIATING OR INTEGRATING BASED ON THE TIME	AND DOLIFICATION TO THE MAIN MOUNTS TANK STREET	SAN NO-11 DO YOU MORK WITH RECTANGULAR MAVE GENER	TOU MONK ON SI	PHESENT JOB ON SPECT 558 TRANSMIT OR RECEIVEN ON THE STANSMIT OF RECEIVEN	SI-03 OF YOU CLEAN SSB TRANSMIT OR RECEIVE	SHE DI-CH DO YOU ALIGN SSB TRANSHIT OF RECEIVE	U 849 01-US DO TOU THOUBLESMOOT TO SSB TRANSMIT OR PECEIVE	G 850 GI-G6 DG TUU TRGUBLESHOOT TO 558 THA SHIT OR RECEIVE	CUMPONENTS O 651 01-07 00 YOU REMOVE ON MEPLACE 550 THANSMIT OR MERETYE	O 852 01-08 GG YOU REHOVE OR REPLACE 558 THANSHIT OR RECEIVE	COMPONENTS

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01-15K	#53 01-09 DD TOU PERFORM TASKS ON 558 AUDIO AMPLIFILES #55 01-11 DC TOU PERFORM TASKS ON 558 BALANCED MODULATORS #55 01-11 DC TOU PERFORM TASKS ON 558 CAMPIER GSCILLATORS #55 01-12 DC TOU PERFORM TASKS ON 558 LC FILERS #56 01-14 DC TOU PERFORM TASKS ON 558 MECHANICAL FILERS #57 01-15 DC TOU PERFORM TASKS ON 558 MECHANICAL FILERS #58 01-14 DC TOU PERFORM TASKS ON 558 MECHANICAL FILERS #58 01-16 DC TOU PERFORM TASKS ON 558 MECHANICAL FILERS #58 01-19 DC TOU PERFORM TASKS ON 558 MELLERS #58 01-19 DC TOU PERFORM TASKS ON 558 FREQUENCY CONVERTERS #58 01-21 DC TOU PERFORM TASKS ON 558 FREQUENCY CONVERTERS #58 01-21 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 01-22 DC TOU PERFORM TASKS ON 558 DCM-TILERS #58 DCM-TILERS	SYSTEM STAGES SYSTEM STAGES 01-24 DO YOU USE OR REFER TO PEAK POWER 01-25 DU YOU USE OR REFER TO PEAK POWER 01-26 DU YOU USE OR REFER TO FREQUENCY STABIL 01-27 DU YOU USE OR REFER TO FREQUENCY STABIL 01-28 DU YOU USE OR REFER TO RESPONSE CURVES 01-29 DU YOU CALCULATE PEAK POWER OR EFFECTIV THANSMITTERS CHEMATE DIAGRAMS 01-29 DU YOU TRACE SIGNALS OR CURRENT PATHS T RECEIVER SCHEMATIC DIAGRAMS	675 02-01 DO YGU MORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JUSS 676 02-03 DO YGU CLEAN PULSE MODULATION SYSTEMS 877 02-03 DO YGU CLEAN PULSE MODULATION SYSTEMS 678 02-04 DO YGU ALIGN PULSE MODULATION SYSTEMS 678 02-04 DO YGU ALIGN PULSE MODULATION SYSTEMS 680 02-04 DO YGU ALIGN PULSE MODULATION SYSTEMS 681 02-05 DO YGU REMOVE OR REPLACE PULSE MODULATION SYSTEMS 682 02-03 DO YGU REMOVE OR REPLACE PULSE MODULATION SYSTEMS 683 02-03 DO YGU REMOVE OR REPLACE PULSE MODULATION (PAH) 575TEMS 685 02-11 DO YGU WORK ON PULSE-POSITION MODULATION (PAH) 575TEMS 685 02-11 DO YGU WORK ON PULSE-POSITION MODULATION (PAH) 575TEMS 686 02-12 DO YGU WORK ON PULSE-CGDE MODULATION (PCM) SYSTEMS 686 02-13 DO YGU WORK ON PULSE-CGDE MODULATION (PCM) SYSTEMS 686 02-13 DO YGU WORK ON PULSE-CGDE MODULATION (PCM) SYSTEMS 686 02-13 DO YGU WORK ON PULSE-CGDE MODULATION (PCM) SYSTEMS 686 02-13 DO YGU WORK ON DOW'T REMEMBER WHICH JYPE OF

PCT MBRS RESPONDING "YES" BY SELECTED GRPS

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

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DY-15K	O 869 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM		PEHFORM TASKS ON	PULSE FURNING NETHORKS O 592 02-18 DO TOU PENFORM TASKS ON PULSE HODULATION SYSTEM	PEHFORM	0 1		U 496 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF.	D 897 02-23 DO FOREGRA TASKS ON PULSE, HODULATION SYSTEM	U 898 02-24 DO FOUR PERFORM TASKS, ON PULSE NODULATION SYSTEM	O 899 02-25 DO YOU PENFORM TASKS ON PULSE MODULATION SYSTEM	•	_		903 02-29 DO YOU USE OF R	104 02-30 DO YOU USE OR	02-31 00 YOU USE ON REFER TO PULSE WIDTH (PW)	O 407 02-13 OF YOU USE OF REFER TO PEAK POWER	408 02-34 00 YOU USE OR REFER TO AVENAGE POWER	0 909 02-35 00 100 CALCULATE PULSE RECURRENCE TIME (FFT) ON FULSE OF 613 02-34 00 100 MEASONE PURSE PERCURENCE TIME (PRT) DR PULSE	RECURENCE FREQUENCY (PRF)	PEAK POWEN OF PULSE MODULATION TRANSMIT SYSTEMS	O 912 02-18 DO 100 184CE SIGNALS ON CONNENT FAINS INFOGEN FOLSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	O 913 02-39 00 YOU TRACE SIGNALS OF CURRENT PATHS THROUGH PULSE	03-01 DO TOU MORK WITH ANTENNAS	U 915 03-02 00 YOU INSPECT ANTENNAS

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TASK GROUP SUMMANY PERCENT MENBERS PERFURNING

PCT MARS RESPONDING TEST BY SELECTED GHPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

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01-T5k	0 945 03-32 DO THE ANTENNA ARRAYS YOU MORK WITH CONTAIN PARASITIC	4	0 4	WE	REMEMBER WHAT KIND OF ELEMENTS	10 NO NOT TO DO ACT TO BOTH		INES ARE DEFINED TO INCLUDE LEA	BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWEN LINES, ETC. DO NOT CONSIDER	P 954 PI-UZ DO YOU REFER TO ON USE COPPER LOSS OF 12R LOSS IN	THANSMISSION LINES BY USE SKIN EFFECTS OF MIGH FREQUENCY	CURRENTS IN TRANSMISSION LINES P 956 PI-64 DU 700 MEFEM TO ON USE RADIATION LUSS IN THANSMISSION	LINES PI-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN	TRANSMISSION LINES P 458 PI-06 DO YOU USE ON REFER TO LEAKAGE LOSSES IN TRANSMISSION	LINES P1-07 DG YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	960 PI-08 00 YOU WORK WITH	P 461 F1=UV DO YOU WORK WITH OPEN TWO=WIRE INDNANISSION LINES P 962 P1=10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION	P 963 PI-11 DO YOU WOHK MITH HIGID COAXIAL CABLE TRANSMISSION	LINES LINES LINES LINES LINES LINES	P 965 PI-13 00 YOU ANALYZE VOLTAGE OR CURRENT MAVEFORMS IN THANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION	COPEN, SHORTED, CAPACITIVE, INDUCTIVE) P 966 P1=14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES	P 967 PI-15 DE TOU USE OFFER TO SCHEMATIC STOR LINE	UKE STANDING MAVE	P 959 PI-17 DG TOU CALCULATE STANDING MAYE MATIOS (SAF) OF	w	DETERMINE THE IMPEDANCE AND LENGTH OF GURTER - MAVELENGTH MATCHING THANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS

PCT MBRS RESPONDING .YES. BY SELECTED GRPS

TASK GROUP SUMMARY DERCENT MEMBERS PERFORMING

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Ly-15K			E OF THANSMISSION LINE NE	FUR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA P 074 PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC	1MPEDANCE (20) OF THANSMISSION LINES 975 PI-23 DO YOU CALCULATE THE CHARACTERIS	FRANSMISSION LINES FRANSMISSION LINES FREGUENCY OF	THANSMISSION LINES	OF TRANSMISSION LINES	LINES FOR PARTICULAR PREQUENCIES		P 480 P1-28 DO YOU USE OR REFER TO THE GENERAL RUCE THAT AS THE	CONSTANT, THE ELEC	INCREASES FOR THE 29 DC YOU BORK WITH NONRESONANT (FLAT) TRANSMISSION	LINES FILLS DO YOU HORK WITH RESO	GES PI-SI DO TOU MORE MITH THAN	P 984 P2-01 DC YGU BOKK "ITH "AVEGUIDES ON CAVITY VESOWATONS IN	YOUR PRESENT JOB 1985 PZ-UZ DO TOU INSPECT MAVEGUIDES OF CA	P2-03 DO YOU CLEAN MAVEGUID	P2-54 DO TOU BEND MAVEGUIDES OR CAVITY R	THE PARTY OF THE PARTY MANEGOIDES OF CAVITY	490 P2-07 DO TOU PURGE #AVEGUIDES ON CAVITY PESON	991 PZ-08 DE 70U TROUBLESHOOT WAVEGUIDES OR	992 PZ-09 DO YOU REHOVE OF INST	CACH TARREST SO SYCHOLOGY CO. 11-574 100	995 PZ-12 DO TOU REMOVE OR INSTALL E BEND	996 PZ-13 DO TOU RENOVE OF INSTALL H BEND	997 PZ-14 00 TOU REMOVE OR INSTALL OTHER	P2-15 DO TOU REPOVE OF INSTALL CHOKE J	1000 P2-10 DO YOU REMOVE ON INSTALL DIRECTIONAL	PZ-18 DG TOU REMOVE OR INSTALL BIDIRECTIONA	TOU USE OR REFER TO "A

TASK GROUP SUMMARY PERCENT NEMBERS PERFORMING

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PCT MBRS RESPONDING TEST BY SELECTED GRPS

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TASK GROUP SURMENT PEHCENT MEMBERS PERFORMING

										MICROWAVE AMPLIFIFRS AND	OSCILLATORS																					
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5PC 127	3	0	0	0	0	0	3 C		3	c	0 0	0	3	0		00	3	0	3 3		0	ככ	0	2	9	0	0	0	0	30	> 0	
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0Y-15K	PIUZS P2-42 DO YOU DETERMINE THE POSITIONING ON SIZE OF APERTURES IN WAVEGLIDES OF CAVITY RESONATORS MITHOUT REFERRING TO	SU STATOS	PIUZZ PZ-44 ARE ROTATING JOINTS USED IN MAVEGUIDES OR CAVITY	PLOZO PZ-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN	MANEGUIDES OR CAVITY RESONATORS YOU MORN WITH PICSO P2-46 DO YOU THAN CAVITY RESONATORS USING CAPACITIVE TUNING	P2-47 DO YOU TU.E CAVITY RESONATORS USING	P2-48 DO "OU TUNE CAVITY RESONATORS USING	OF TUNING OMESSURE THE FREQUENCY O	PID34 PADI IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS. THAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR	MAGNETRONS	FIGSS PS-02 DG TOU USE ON MEREN TO INTEMELECTROBE CAPACITANCE PIOSA PS-03 DG YOU USE ON MEREN TO FLECTRO! TRANSIT TIME	P3-04 00 YOU USE OR REFER TO	P3-05 DO YOU USE ON REFER TO	CINCULTRY PLOS DO YOU USE ON REFER TO PHINCIPLE, OF ELECTRON VELOCITY	MODULATION	PICKO PS-CV OF YOU USE OF PEFER TO ELECTRON BUNCHING	P3-U9 30 TOU #0RK #1TH TH	P3-10 30 YOU MONK BITH NE	THE TARREST TO THE SOLE SITE THANKELING TANK TUBEN (THIS)	AMPLIFIERS	P3-13 DO TOU	SUCCESSED TO SECURE THE PROPERTY OF THE PROPER	PA-16 DG TOU CLEAN KLYSTR	P3-17 00 700 TONE ALYSTHO	Paris DO YOU TUNE ALYSTHONS OF THT MECHANICALLY	PIDS2 P3-19 DO YOU PEAFORM OPERATIONAL CHECKS OF KLYSTRONS OR	THE RO SHOOLSKI TO TO THE SOLE OF SOLE	P3-21 00 700 HENOVE OF HE	P3-22 DU YOU REHOVE OR KEN	PJ-23 Do fou INSPECT PARA	PICES PERSON TO TOUR OF THE PROPERTY OF THE PERSON OF THE	THE STATE OF THE PROPERTY.

PCT MBHS RESPONDING .TES. BY SELECTED GRPS

TASK GROUP SUMMARY PERCENTING

PLT HER RESPONDING .YES. BY SELECTED GRPS

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TASK GROUP SUMMANT PENCENT MEMBERS PERFORMING

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SPC 128	0	0	0	o	a	0	0	D	0	0	0	0	0	0	0	0	0 0	0	0	0	2 2	9	80	0.0	9	0
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DY-15K	PLOBS PA-55 DO YOU USE ON REFER TO THE OPERATING PRINCIPLES OF	PIGES PASSION COLFOR LEADS PIGES PASSION OF THE FEET OF THE OPENATING PRINCIPLES OF	146	-	4	-	THAVELING-BARE TUDES HELIMES FLOGG PARTICIPLES OF REFER TO THE OPEGATING PRINCIPLES OF THAVELING-BARE THEORY	-4	-	THAVELING-WAVE TUBES ATTENUATORS PIUST P3-64 DO YOU PEMFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE	CIRCULATORS PLAFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL	PID99 PJ-66 DO YOU PEHFORM TASKS ON PARAMETRIC AMPLIFIER IDLER	PIIOG P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR	DIODES DIO YOU PEHFORM TASKS ON PAPAMETRIC AMPLIFIER FERRITE.		P3-70 NO YOU PERFORM	P3-71 DO TOU PERFORM TASKS ON	PILOS PIEZZ DO TOU PERFORM IASKS ON MEATER LEADS	P3-74 DO YOU PERFORM TASKS ON	P3-75 UD YOU PEMFORM TASKS ON CATHODES	PILOT PISTO DO YOU PERFORM TASKS ON MAGNETS WILLIA GISOL DO YOU USE ON PEFER TO STORAGE REGISTERS	41-62 DO YOU USE OF REFER TO SMIFT REGISTERS	41112 41-03 DD YOU USE ON HERER TO LOGIC STABOLS OF SHIFT REGISTINS	TITIS OF THE TOU USE ON REFER TO LOGIC STMBOLS OF STORAGE	GILLY SILOS DO YOU TRACE THE DATA FLOW THROUGH LOGIC CLAGRAMS OF	SHIFT PEGISTERS SHIPS 01-30 DU YOU TAKEE THE DATA FLOW THROUGH LEGGIC DIAGRAMS OF OTHER TYPE OF HEGISTERS.

Pet MBMS MESPUNDING OFFS. BY SELECTED GMPS

GP SUNA PAGE 40

FASK GHOUP SUMMANY PERCENT MENBERS PERFORMING

				000000000000000000000000000000000000000	STUKAGE DEVICES								DIGITAL TO	ANALUG CONVEKTERS																					
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Dr-15k	WILLS WIND DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A Shift register after a specified number of shift pulses have passed	WILLY GENUT DO YOU WORK MITH DIGITAL COUNTERS, REGISTERS, OR STURING DEVICES IN YOUR PRESENT JOH	42-02 DO YOU USE OR HEFER TO	42-03 DO YOU USE OR REFER TO MAGNETIC	42-04 DO YOU USE ON REFER TO MAGNETIC	UZ-US DO TOU USE OR REFER TO MAGNETIC TAPES	STIRS GE-US DO YOU USE OR REFER TO ACCESS TIME ON SPEED OR	MENORAL STEERS TO BEER TO LOBO CAPACITY OF MENORAL	SYSTEMS	OR PEFER TO VOLATILITY OF	-		41127 43-02 DE TOU COMPUTE OUTPUT VOLTAGES FOR ELECTRONECHANICAL	DIGITAL-TO-AMALOG (DZA) CONVERTERS FOR GIVEN IMPUT	THE THE PARTY OF MARKET OF THE CANADA THE THE THE THE THE THE	016174L-TO-ANALDE	CONVERTENS 15 DETERMINED BY ADDING THE DENOMINATORS OF THE	RESISTORS	STILES SEED TO TOO COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY	UNCTION TASKS ON VARIABLE	ANALDG-TO-DIGITAL 19/01 CONVERTER CIRCUITS	CTION	ANALOG-10-DIGITAL (A/D) CONVENTER CINCUITS	TIME ANALOG-TO-DIGITAL (A/D)		THE AVALOG-TO-DIGITAL (A/D) CONVERIER CINCUITS	DI VARIABLE TIME AVALOGATO-DIGITAL (AZD) CONVENTER	WILLS 43-10 DO TOU USE ON REFER TO SAMPLE FUNCTION OF A/D	CONFERENCE OF STREET	ישר ום עולה ום עולה ומיליום מיליום	STIST GS-12 DG TOU USE ON MEFER TO COMPANE FUNCTION OF AZD	CONVERTERS	STIBS 53-13 DO TOU USE ON MEFER TO DIGITAL FUNCTION OF A79	41139 43-14 DO YOU PERFORM ANY TASKS ON PECHANICAL ANALOGOTO-	

PCT MBAS RESPONDING .YES. BY SELECTED GRPS

IN 3984 SHOE

TASK GROUP SUMMARY PERCENTING

	PHANTASTRONS			SCHMITT TRIGGERS		CABLE FABRICATION		TIGHTIONE	DEVICES		PHOTO SENSITIVE DEVICES			SMOTTEGOTY SHOWOGHONYS	(CHOPPER CIRCUITS)										INFRARED									
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DY-15K	RELEG RE-DE DO YOU WORK WITH PHANTASTRON CIRCUITAT IN YOUR	RITH! RE-UL IN YOUR PRESENT JOB OD YOU WORK ALTH SCHMITT INTGOEN	CINCUITS RISTA HE-DE DO TONE DETA FLOW THROUGH SCHMITT THIGGER	SCHEMATIC DIAGNAMS RIPHS R2-03 DE YOU USE OR REFER TO SCHMIIT TRIGGER LOGIC SYMBOLS	HILM RI-DI IN YOUR PHESENT JOB DO YOU FABRICATE MULTICONDUCTOR	CABLES 41145 H3-02 DO YOU FAURICATE COAXIAL CABLES	SITTE STOR IN TOUR PRESENT JOB DO TOU PERFORM ANT TASKS UP	S1147 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE	LIGHT DECOURT SYSTEMS SILMS SI-03 DO YOU ANALYZE NIKIE LIGHT DECOUER SYSTEMS USING	BUOLEAN ALGEBRA		STISS SEED IN TOUR PRESENT JOB DO TOU MONK WITH CHOPPEN CINCULS	SITS SAFER OF YOU MENOUSE EXCLIDENT PRINCES SELECTION	S3-U4 DO YOU USE OR REFER TO FXCITATION FRE	S3-US DO YOU USE OF PEFER TO VOLTAGE			SIISS SEED DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER	CIRCUIT OPERATION	SITS? SG-08 UD YOU USE EMPOR SIGNAL DEVICES IN CONJUNCTION WITH	SIISS SS-09 DO YOU USE COMPANISON CINCUITS IN CONJUNCTION WITH	CHUPPER CIRCUIT OPERATION	INFRARED SYSTEMS		TITOT TI-03 DO YOU CLEAN INFRARED SYSTEMS.	TILES TI-GY UG TOU AUJUST OR CALIBRATE INFRARED SYSTEMS	11163 11-05 DO 700 OPERATE INFRARE SASTENS	STATEMS	TILES TI-07 DO YOU TROUBLESHOOT MAJOR ASSETULIES OF INFRARED	SYSTEMS TILES TI-UB DE TOU TROUBLESHOOT DOWN TO INFHARED SYSTEM	COMPONENT PARTS THAT THE POST OF MEMORY OF MEMORY ASSESSED ASSESSED TO THE PARTS OF MEMORY OF ME	INFRARED SYSTEMS	TILES TI-10 DO TOU RELOVE OR AEPLACE INFRANCO SYSTEM	

PCT MBRS RESPONDING TYEST OF SELECTED GRPS

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

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VY-T5K	11-11 00	3 DO YOU USE OR REFER TO NEAR RESION	101 00 101 00 00 00 00 00 00 00 00 00 00	TI-16 DO YOU USE ON REFER TO BLACK	11-17 00 700 USE OR	THE OWNER OF STREET OF STREET	1-25 DO YOU PERFORM TASKS ON BLITZ	TI-ZI DO YOU PERFORM TASKS ON TARGET B	TI-22 DO TOU PERFORM TASKS ON ERECTOR LENS	11-23	TIEST DO YOU PERSONN TACKS ON ELLIESS	TI-26 DC TOU PENFORM TASKS ON S	TI-27 DO YOU PEHFORM TASKS ON PLANE MIRRORS	12-01 U	12-02 00	DO YOU CLEAN LASEN SY	12-U4 DO YOU OPERATE LASER SY	11190 TZ-US DO TOU OPERATE LASER SYSTEMS	12-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLES	SYSTEMS OF TOTAL PROPERTY OF THE PARTY OF TH	SYSTEMS	4 TZ-09 DO TOU RENOVE OR REPLACE MAJOR ASSEMBLIES OF SYSTEMS	11195 12-10 DG YOU REMOVE OR MEPLACE COMPONENT PARTS OF LASER	12-11 00 YOU USE	12-12 DO YOU USE ON MEJER TO ELECTHON E	12-13 DO YOU USE OR REFER TO GROUND STA	DO YOU USE OR REFER T	TZ-16 DO YOU USE OR RIFER TO PHOTONS	2 T2-17 39 YOU USE OR REFER TO SPONTANEOUS	11203 12-18 00 YOU USE OF REFER TO STIMULATED EMISSION	72-29 BO YOU USE OR REFER TO INVERSION LEVEL	12-21 DO YOU USE OR REFER TO MONOCHRO	T2-22 DO YOU MORK WITH ACTIVE HATERIA	SALINE THE MON DON	A COLOR OF THE PROPERTY OF THE

LASERS

PLT HBRS RESPONDING TEST BY SELECTED GAPS

GPSUMA PAGE 43

TASK GROUP SUMMARY PERCENT MEMBERS PERFURMING

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NY-15K	TIZIG TZ-ZS DO YOU NORK WITH MALF SILVERED 1924 HEFLECTIVE!	TIZII TZ-Z6 DU YGU MOAK WITH HELICAL FLASHTUBES	12-27 DO YOU 40KK WITH KUBY	14-48 DG 100 MOHK WITH HELIUM-	17-74 OF 100 BOKK #11H	TE-30 DO TOU TORK WITH XENON	12-31 DO YOU TORK #1TH	12-32 DO 700 MORK #11H ARGON	12-33 DO YOU MORK WITH NEOUTHIN	12-34 DO YOU WORK WITH GALLIUM	IN TOUR PRESENT JOB DO Y	45	GE TUBES (MMST)	13-02 DG 100	T3-U3 DO YOU CLEAN DVST OR MMS	13-64 DO YOU ADJUST OF CALIBRATE DVST OR MAST	13-05 00 160	13-Us DC YOU TROUBLESHOOT DYST OR MMST	C1#C0175	11226 13-07 DO TOU REMOVE ON REPLACE DVST OR MMST TUBES FROM	MAJOR ASSEMELIES OR UNITS	11227 13-00 DO YOU PENFORM TASKS THAT MAKE IT NECESSARY TO NAME.	THE VARIOUS ELLMENTS OF DVST	TIZZH 13-09 DO YOU PENFORM TASKS THAT MAKE IT NECESSARY TO NAME	THE VARIOUS ELEMENTS OF MMST		T3-11 DO YOU PERFORM TASKS ON W	13-12 DO YOU PERFORM TASKS ON ATTACK	13-13 Un YOU PENFORM TASKS ON ERASE	13-14 UD YOU PERFORM TASKS ON STORAG	U1-01 IN YOUR PRESENT JOB. DO	TASKS	01-07 DO 400 02F ON VEREN 10 D	U1-03 DO TOU USE OR REFER TO P	U1-04 DO YOU USE ON REFER TO H	01-05 00	U1-06 00 700 USL UR REFER TO F	U1-07 DG YOU USE ON REFER TO	U1-08 DO YOU USE OR REFER TO T	UI-09 DU YOU USE ON REFER TO D	UI-10 DO TOU USE ON REFER TO A	UI-11 DO YOU USE OR REFER TO A	UI-12 DO TOU USE ON REFER TO S	UI-13 DO TOU USE OR REFER TO INFORMA	UI-I" DO TOU PEAFORM TASKS ON SINGLE LEVEL	U1248 UI-15 DO TOU PERFORM TASKS . ILTI-LEVEL PROGRAMMING

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TASK GROUP SUMMARY PERCENT MEMBLRS PERFORMING

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27-75K	UISYO UI-16 DU YOU PERFORM TASKS ON INPUT DEVICES UISYO UI-17 DU YOU PERFORM TASKS ON STORAGE DEVICES UISS UI-18 DO YOU PERFORM TASKS ON ANTHMETIC SECTIONS UISS UI-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS UISS UI-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES UISS UI-21 DO YOU PERFORM TASKS ON POMER SUPPLIES	UISSA UZ-OT UO TOU USE DECIBELS TO EXPRESS AMPLÍFICATION AND ATTENUATION UISSA UZ-UZ DO TOU USE LOGARITHMS TG COMPUTE OUTPUT POWER IN DECIBELS UISSA UZ-UZ DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN UISSA UZ-UZ-UZ DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN UISSA UZ-UZ-UZ DOMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED

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DIGITAL NAVIGATION/TACTICS TRAINING DEVICES SPECIALIST AFSC 341--ETC(U)
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19. KEY WORDS (Continue on reverse side if necessa Electronic principles	ry and identify by block number, Electronics	
Basic electronics	Air Force train	ina
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Electronic technicians		

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Digital Navigation/Tactics Training Devices Specialist (AFSC 34156). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.

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